

Where to start

If you'd like more information before you start, talk with someone who's already on the Internet and can tell you something about what's out there in cyberspace. Reading works, too. There are hundreds of books about the Internet. For example, *Internet Starter Kit for Macintosh*, an excellent book by Adam Engst (Hayden Books, 1994), tells you everything you need to know about establishing a connection. The book describes most of the applications mentioned in this brochure, and even includes the software you'll need to connect your Macintosh to the Internet.

Finding the right access provider

To get connected, you'll need to sign up with an Internet service provider. The company you select provides your on-ramp to the Information Superhighway. The *Internet Starter Kit* lists many U.S. service providers, together with their addresses and phone numbers.

Use a local provider to avoid being charged for long-distance telephone calls in addition to usage fees or monthly charges. Contact the providers listed under your area code and find out what types of Internet access they offer, and at what cost.

Once you investigate the available options for yourself—and take a test drive on your Macintosh—you'll be in a better position to shop for a provider for your entire network.

Four ways to connect

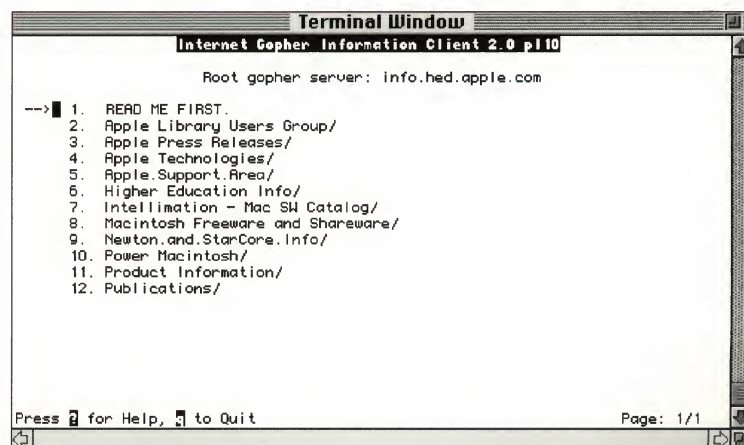
There are four ways to connect to the Internet—two indirect methods and two direct methods. Your choice should be determined by the features you need.

Indirect connections

Consider an indirect connection if you're connecting a single Macintosh and need access only to the subset of Internet features that are available through the software you use, or need access to all the features at the lowest possible price. Either way, you'll be making a trade-off between price and ease of use. If you don't use an on-line service, you'll need to learn the basics of the UNIX® operating system.

Mail-only connection. The most basic option for connecting a single Macintosh, mail-only connections are offered by many providers—and by nearly all the major on-line services, including AppleLink®, America Online, eWorld™, CompuServe, GENie, and Prodigy. Your local bulletin board service (BBS) may exchange e-mail with the Internet; all Fidonet and many FirstClass BBSs let you send mail to Internet users, and often offer this service for free.

UNIX shell account. This type of service involves accessing the Internet through a command-line user interface, and is often used to connect a single Macintosh. The interface looks and feels like UNIX—usually because it is. With a shell account, you're not directly connected to the Internet, but are sharing a UNIX computer that is. You use your Macintosh as a



UNIX shell accounts are a relatively inexpensive way to get on the Internet; you'll most likely be charged a flat monthly fee. The drawback is that you'll have to learn to use the UNIX command-line interface, navigating with keyboard commands instead of your mouse.

Welcome to

These days it seems as though you can't flip through a newspaper or turn on the television without coming across a reference to the Information Superhighway. Everybody's talking about it, but nobody can tell you what it is. You can be sure of one thing, however: Though it has been the subject of a great deal of media hype and fanciful speculation, the Information Superhighway represents great opportunities for collaboration in the fields of research, commerce, and education.

Trouble is, it isn't here yet—and chances are, it won't be a reality for a while.

In the meantime, a forerunner of the Information Superhighway already exists out in cyberspace. It's called the Internet, and you can explore it on your Apple® Macintosh® computer. The Internet is

a vast community of interconnected computer networks—15,000 by conservative estimates. It's used by more than 25 million people in 81 countries, and it's growing at a rate of 10 to 15 percent per month.

A global resource

The "net," as it's called, is a truly global resource, with prodigious amounts of information on art, anthropology, engineering, finance, literature, marketing, music, and virtually every other area of interest imaginable.

Not surprisingly, the Internet is used by people in all fields—not just by the academics and government researchers who founded it. The Internet enables teachers to bring the world into their classrooms; students can go on-line to use

cyberspace.

the Library of Congress, collaborate with peers halfway around the world, download weather maps and images from NASA space explorations, or exchange e-mail with researchers in Antarctica.

For businesses, the Internet represents the opportunity to let millions of people know about their products and services.

From the smallest school to the largest corporation, anyone who is connected can publish information on the Internet—in effect, making that information available to all 25 million users in 81 countries.

The Macintosh advantage

You already have an advantage over most people on the Internet: You use a Macintosh computer. Macintosh advantages such as easy-to-use

networking, plug-and-play peripherals, and the ability to work easily with multiple applications and windows really come into their own when you're using the Internet. These capabilities, together with built-in technologies such as MacTCP[®] software, make the Macintosh the easiest-to-use computer on the Internet, giving you a head start on your forays into cyberspace.

As anyone who has tried it knows, however, building and connecting your own piece of the Internet can be quite a challenge—especially if you don't know where to start. The first in a series about the Internet from Apple Computer, this brochure is designed to provide you with that information.

Most organizations want their own domain name, and you'll need to find out whether the name you've chosen is already in use. Your service provider will work with the Internet Network Information Center to get the IP addresses and to verify the availability of your domain name.

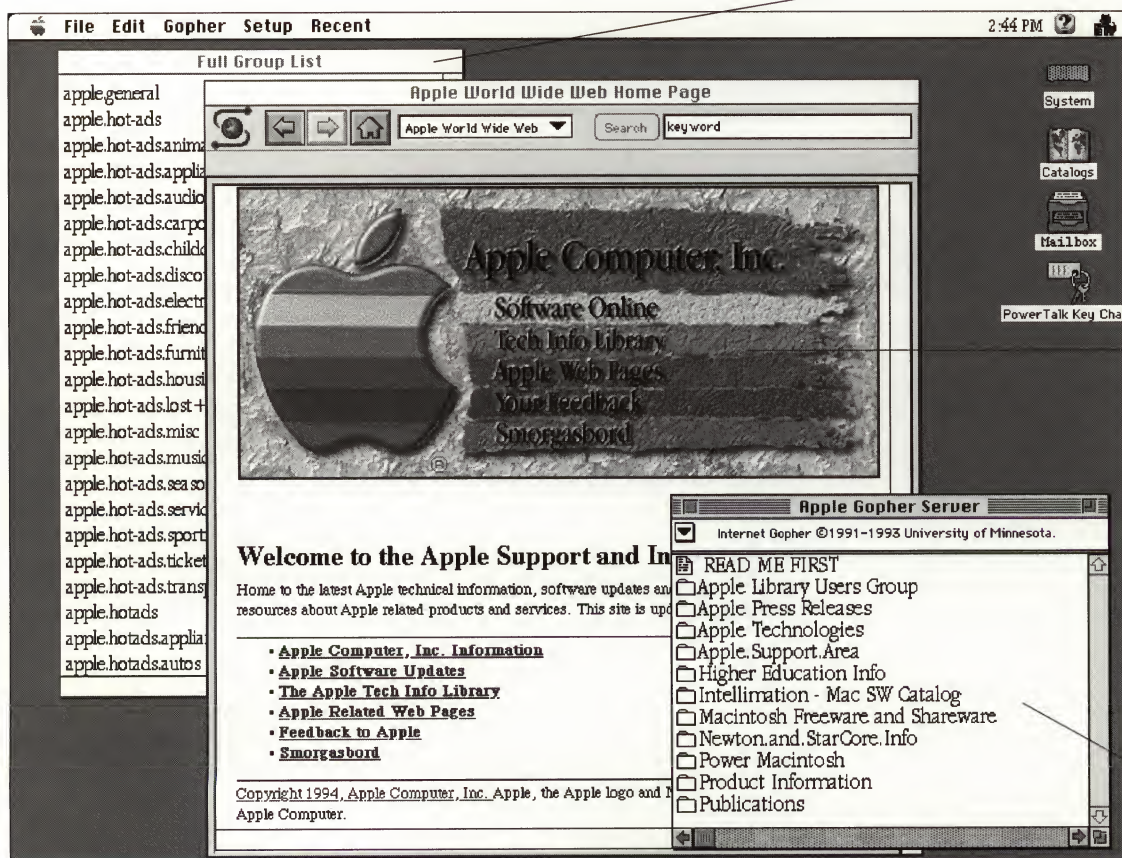
The role of the router. For data to be routed to the appropriate destination, your network must be connected to the Internet. To do that, you need a piece of data communications equipment called a router. The router provides the physical connection between your LAN and a line to your service provider; it directs communications to and from your network.

Any router that supports TCP/IP—the protocol used on the Internet—will ensure compatibility. Just remember to check with your service provider before purchasing

equipment, to make sure your provider can help you get it configured and running properly.

Keeping track of everything. You must also set up a domain name server to keep track of the names of your computers and their IP addresses. The name servers at all the sites on the Internet work together and form the Domain Name System (DNS). For example, when you use Mosaic to access Apple's World Wide Web server, the IP address for www.info.apple.com is looked up in the DNS; the address (204.96.16.2) is located, and the connection is made between your Macintosh and the server.

By keeping track of everything, the DNS saves you the trouble of having to deal with the complexity of IP addressing, and allows you to use names (instead of IP addresses) to connect to servers.



Likened to a vast electronic forum, the Usenet newsgroups have something for everyone—however offbeat or arcane the topic. Internet users who post their articles and messages to these newsgroups enjoy a degree of freedom that's hard to come by with any other medium.

Often called "the illustrated Internet," the World Wide Web is headquartered at the National Center for Supercomputing Applications at the University of Illinois, Urbana-Champaign. Mosaic, the application used on the Web, has brought pictures and sound to millions of people on the Internet.

Use TurboGopher, an application with a whimsical cursor, to find the proverbial needle in a haystack—that vital piece of information you'll never be able to find anywhere else. This tool from the University of Minnesota enables you to browse through the riches you'll find on 1,500 information servers around the world.

A direct connection (either dial-up or through your site's local area network) lets you use a number of applications developed for the Mac OS; you can cruise the Information Superhighway with all the ease of use you've come to expect from Macintosh.

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supports only a single protocol (TCP/IP), PPP is your best option—provided you have a choice.

The third dial-up solution, Apple Remote Access and a DDP/IP gateway, is favored by organizations that want to extend their Internet connection to remote or traveling users. Apple Remote Access servers, used with the new Apple IP Gateway software (or a third-party DDP/IP gateway), make it easy to provide Internet access to remote users. Of the dial-up Internet solutions, it's the easiest to configure. On the remote Macintosh, it allows MacTCP to work without any extra software, the same way MacTCP works on LocalTalk® networks. Note that few service providers offer this type of connection, since it is currently available only for Macintosh.

If you are establishing a direct dial-up Internet connection for a single Macintosh, your connection has now been made and is ready to use.

Connecting your LAN to the Internet. This solution lets you connect a group of computers, and is ideal for an organization that wants to publish on the Internet. You don't need a modem for this type of connection. Each Macintosh connects to your site's LAN using MacTCP and LocalTalk, Ethernet, Token-Ring, or whatever cable system is installed at your site. The LAN is connected to your Internet service provider through a router (usually using a high-speed dedicated line); the connection is maintained 24 hours a day. Like the dial-up connection, this kind of connection provides access via all the easy-to-use Macintosh tools for the Internet.

You can also install Internet server software on computers on your LAN, and share information about your organization with other Internet users. Macintosh computers with software such as FTPd, GopherSurfer, or MacHTTP are the easiest Internet servers to set up and administer. FTPd provides the server side of Internet file sharing. GopherSurfer and MacHTTP allow remote users with Gopher or World Wide Web browsers (such as Mosaic) to navigate through the data you've published.

You may want to make an AppleSearch™ database available to Internet users; GopherSurfer and MacHTTP allow remote Internet users to conduct searches on your AppleSearch server. This is a welcome alternative to running WAIS search engines on UNIX, previously your only option.

Notes for network managers

If you are connecting your LAN to the Internet, you'll need to take care of a few more details. First, you or your network manager will need to work with your service provider to obtain a group of Internet Protocol (IP) addresses, then you'll have to register for a domain name.

Your name and number. An IP address is a unique number that allows a network device such as a computer or printer to be recognized on the Internet. Information that identifies your site is composed of two parts: a group of unique IP addresses and a domain name, which is the site name seen by other Internet users. The combination of your site's domain name and IP addresses allows mail and other types of traffic to be directed to a router that can forward messages to your site.

Make the most of your Macintosh.

What can you do on the Internet? The most basic service is e-mail, and an on-line service can usually meet this need. More advanced features include everything from videoconferencing with other Internet users to exchanging files directly with another Internet user anywhere on the network. Once you're connected, you're all set to use the Internet to communicate with other users—across the hall or across the globe.

In deciding how to make your connection to the Internet, you'll make trade-offs, depending on your needs and your budget. It's your decision. Remember that whatever method you choose, you already own the machine that's practically made for the exploration of cyberspace. The Macintosh computer.



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Imagine having
25 million people in
81 countries connected
to your Macintosh.



terminal to operate the character-based client programs that provide access to Internet services; the programs run on a remote UNIX computer.

Since you are using a remote computer, a task such as downloading files is a two-step process: The first step is to get files from the Internet to the UNIX server, and the second is to get them from the server to your computer.

Direct connections





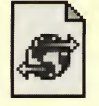

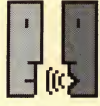

You'll need a direct connection to take advantage of easy-to-use Mac™ OS-based Internet applications. With a direct connection, either your Macintosh or your local area network (LAN) is actually "on the Internet." (If you're already connected, here's a simple way to find out if you're "on the net": If you can initiate or receive a file transfer using a Macintosh tool such as Anarchie, Fetch, or TurboGopher, your Macintosh is on the net, and can be an Internet client, an Internet server, or both.)

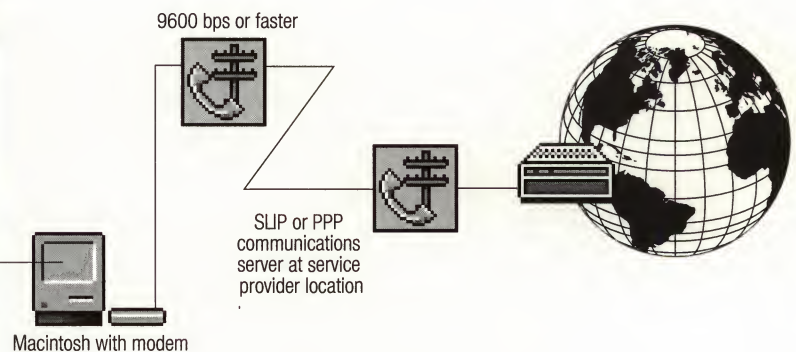
Dial-up connection. With this type of connection, you can establish a link to the Internet from a single Macintosh, using a modem and one of three dial-up LAN technologies: Serial Line Internet Protocol (SLIP), Point to Point Protocol (PPP), or Apple Remote Access and a DDP/IP gateway. The technology you use will be determined by the technology your Internet service provider uses to answer your call. In any case, you'll be connecting to a LAN that is already on the Internet.

Your service provider may want to know whether you want to be connected using SLIP or PPP. You're likely to hear this question if your service provider supports both types of

connections. SLIP and PPP provide equivalent Internet access. Macintosh implementations of SLIP and PPP are extensions that allow MacTCP to be used with a modem. Several free and commercial software packages for SLIP and PPP are available.

PPP lets you use multiple protocols concurrently over a dial-up link, and many organizations are starting to use it as a dial-in solution for Macintosh computers, IBM or IBM-compatible computers, and UNIX workstations. Since SLIP

| Applications that use MacTCP | | | Required system software |
|--|---|---|---|
|  |  |  |  |
| Terminal software | FTP file-transfer software | Gopher software | MacTCP |
|  |  |  |  |
| Mosaic or other WWW software | News-reading software | IRC chatting software | Third-party SLIP or PPP extension for MacTCP |



A dial-up connection gives you a wide choice of Internet applications. You'll need a 9600-bps or faster modem, MacTCP software, a third-party SLIP or PPP extension for MacTCP, and an account with a dial-up Internet service provider.

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